ADVR-2200M

New Type Hybrid Analog/Digital Voltage Regulator, built to substitute some Digital Regulators used with Marathon* Generators With PMG. Easy to Set-Up and Program



Installation Manual

Mounting Plate included



1. SPECIFICATION

Sensing Input E1, E2, E3

Voltage 220 ~ 600VAC, 60Hz

DIP Switch SW1, 2 Selectable 175 ~ 280VAC @ 220VAC 330 ~ 515VAC @ 380/440VAC 420 ~ 660VAC @ 480/600VAC

Frequency Single or 3 phase Input

DIP Switch SW3 Selectable

Power Input P1 & P2

Input

Voltage 30 ~ 260VAC, 60Hz

Single phase

Output

Voltage 85VDC @ 110VAC input

170VDC @ 220VAC input

Current Continuous 5A Max.

Intermittent 10A for 60 sec

Voltage Regulation

< ± 0.5% (with 4% engine governing)

Voltage Build-up

Residual voltage at AVR terminal > 5 VAC @ 25Hz

Thermal Drift

0.45% per °C change in AVR ambient

External Volts Adjustment

5% with 500ohm 1 watt trimmer 10% with 1000ohm 1 watt trimmer

Excitation Resistance

> 9 ohm

Max. Power Dissipation

12 watt

Current Compensation

1 or 5A > 0.2VA (DIP Switch SW3 Selectable)

(C1,C2)

Max. ±7% @ P.F ±0.7

Analogue Voltage Input

Un 0 ~ 15% @ 0 ~ 10VDC or 0 ~ ±5VDC

Frequency Knee Point

60Hz Factory setting is 57 Hz 50Hz Factory setting is 47 Hz

Response Time

<1 Cycle

Dimensions

150mm L * 135mm W * 55.5mm H

Weight

470g ± 2%

2. FIGURE AND SIZE

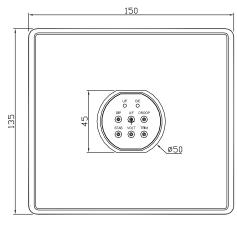
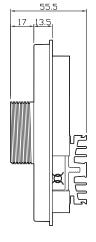


Figure 1 Outline Drawing



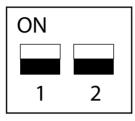
ATTENTION

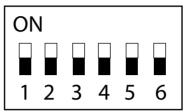
- AVR can be mounted directly on the engine, genset, switchgear, control panel, or any position that will not affects operation. For dimension reference, see Figure 1.
- All voltage readings are to be taken with an average-reading voltmeter Meggers and high-potential test equipment must not be used. Use of such equipment could damage the AVR.
- 3. Fuse Specification: 6.3A / 250V Slow Blow Type
- 4. Terminal: "Fast-On" terminals 6.35mm (1/4 inch).

2 ADVR-2200M-60Hz

Programming

SW1





SW₂

SW1	1.OFF 2.OFF 220V	SW2	4.OFF 5.OFF <90KW
	1.OFF 2.ON 380V		4.ON 5.OFF 90-500KW
	1.ON 2.ON 480V		4.ON 5.ON >500KW

SW2	OFF		ON
	1	1 PHASE	3 PHASE
	2	60Hz	50Hz
	3	O/E PROTECT ON	O/E PROTECT OFF
	6	CT 1A	CT 5A

SW1

SW1 & SW2 Sets the Generators Sensing Voltage SW2

SW1 - Set Sensing for 1 Phase or 3 Phase

SW2 - Set Generator Frequency

SW3 - Set Over Excitation Protection ON or OFF

SW4 & SW5 - Sets Generator Size

SW6 - Sets Size of Droop CT

Adjustments

U/F Under Frequency Protection Adjustment When generator RPM falls below the knee point, the under frequency protection circuit will activate and the voltage and frequency begin to decrease in linear descend.

Select frequency 60 or 50Hz according to the generator in use.

LED Indicator lights when the genera-tor is U/F Under-Frequency and when the generator is in Over-Excitation protection.

U/F O/E

DIP U/F DROOP

STAB VOLT TRIM

SSTAB VOLT TRIM

SGE ME

STAB Stability Adjustment

Correct stability adjustment must be conducted while the generator is operating without load. First adjust the STAB potentiometer (POT) clockwise until the voltage becomes unstable, and then slightly adjust it anti-clockwise (About 1/5 turn). When the voltage just reaches the critical point (Knee point) of stabilization, where the voltage is stable yet very close to becoming unstable.

DROOP Droop Adjustment When paralleling, the AVR increase or decrease its voltage output, when phase current leads or lag the voltage. The increase and decrease range can be preset by the DROOP adjustment.

TRIM Trim Adjustment
When terminal A1 and A2 are
biased with a DC voltage (0~10V),
the TRIM is then used to adjust the
influence this DC has on the
output voltage of the AVR. If the
TRIM (POT) is adjusted fully
counter-clockwise, any bias
voltage will not cause any
influence. On the contrary if the
TRIM is adjusted fully clockwise,
then any signal will produce a
maximum 10% effect.

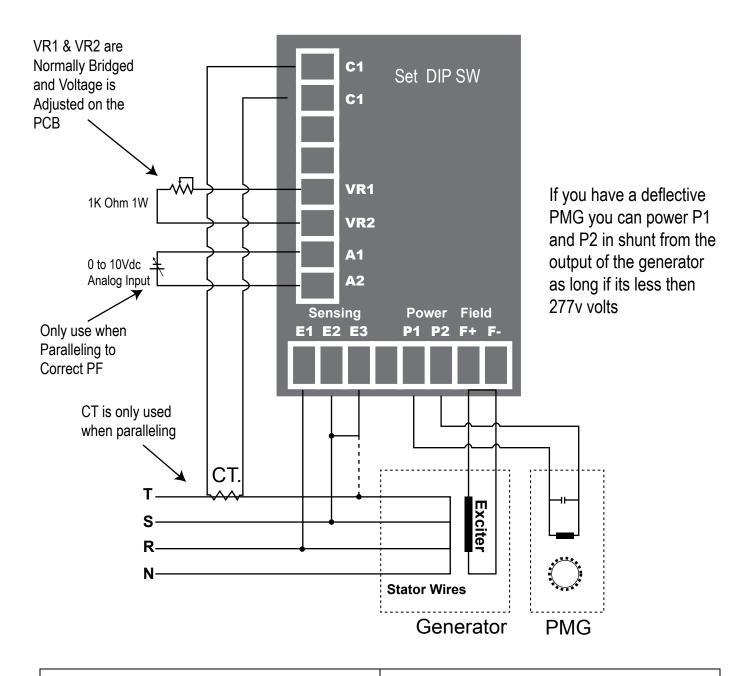
VOLT Voltage Adjustment Generator rated output voltage adjustment. Must be in accordance with the DIP Switch SW1-1 & 2 voltage range setting

DIP Adjustment

The DIP adjustment allows some control over the generator voltage dip when applying load. It is used, when the generator uses a turbocharger that sometimes lags the load and briefly operates below the UFRO knee point, (LED ON). With the DIP pot set CCW, the generator voltage characteristics will follow the normal V/Hz line as the speed falls below normal. Turning the DIP potentiometer CW increases the V/Hz slope, providing a greater voltage dip and aiding engine recovery. The DIP potentiometer can be set at any position to suit any engine type.

4 ADVR-2200M-60Hz

Wiring Connections



Sensing Voltage can be set from 200 too 600 Volts Program SW 1 1&2 correctlly.

For single phase sensing bridge E2 & E3 and move SW2-1 to OFF

ATTENTION

The AC voltages recorded by the AVR are average values.

External VR: 500 ohms 1 Watt gives 5%

adjustment range

External VR: 1K ohms 1 Watt gives 10%

adjustment range